

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

TITLE V (DRAFT PERMIT) NO. V-06-003
HEADQUARTERS, 101ST AIRBORNE DIVISION (AIR ASSAULT) AND FORT CAMPBELL
FORT CAMPBELL, KY.

MARCH 13, 2006

BRIAN BALLARD, REVIEWER

SOURCE I.D. #:	021-047-00030
SOURCE A.I. #:	751
ACTIVITY #:	APE19990002

SOURCE DESCRIPTION:

The Division received a source-wide air permit application from Headquarters, 101st Airborne Division (Air Assault) and Fort Campbell on December 1, 1999. This application was considered complete by the Kentucky Division for Air Quality, hereafter “The Division” on January 27, 2000. The items in this application are:

A spray booth for repair and refinishing of military equipment (e.g. HUMVEEs and trucks) located in building 6490 (EP 12). The paint booth is identified as EU01 in permit V-06-003.

A spray booth for coating operations of military aircraft located in building 7156A (EP13), identified as EU02 in V-06-003.

A 10.5 MMBTU/hour natural gas / distillate oil boiler, Serial # 2D1747 and two 50 MMBTU/hour natural gas/distillate oil boilers, Serial # 2D1744 and Serial # 2D1745 located in building 3902 (EP23), identified as EU03 in V-06-003.

A 42 MMBTU/hour natural gas / distillate oil boiler, Serial # 28163 located in building 3902 (EP50), identified as EU04 in V-06-003.

Subsequent Applications Received:

The Division received an application for a spray booth for coating of aircraft parts located in building 7274 (EP50) on July 3, 2001. The spray booth is identified as EU05 in V-06-003. Additional information in regard to the type of coatings used in this paint booth was received by the Division on August 12, 2004.

The Division received an application for a spray booth for coating of aircraft parts in building 7162 (EP55) on February 8, 2005. The spray booth is identified as EU06 in V-06-003.

The Division received an application for an abrasive blaster located in building 7162 (EP57) on June 30, 2005. The abrasive blaster is identified as EU07 in permit V-06-003.

SOURCE DESCRIPTION (CONTINUED):**Subsequent Applications Received:**

The Division received an updated list of insignificant activities on November 1, 2005.

The Division received revised permit applications for surface coating operations in building 6490, 7156A, 7162 and 7274 on January 19, 2006. These surface coating operations correspond to EU01, EU02, EU05 and EU06 in permit V-06-003. The revised permit applications reflect the following changes:

Surface coating operations in buildings 6490, 7156A, 7162 and 7274:

- Water-dispersible specialty coatings [e.g., chemical agent resistant coating (CARC), etc.] are to be used instead of solvent based coatings.

Surface coating operations in buildings 6490, 7156A, and 7162:

- Water-dispersible cleanup solvent (Acrastrip 600) is to be used instead of organic solvent based cleanup products.

Surface coating operations in building 7162:

- Since the coatings and applicator cleanup solvent used are water-dispersible products, the carbon adsorber cited in the previous application (received February 1, 2005) for this source will not be used, or needed, as the control device/technique for the purpose of meeting applicable emission limits for volatile organic compounds (VOCs) and organic hazardous air pollutants (HAPs).

The Division received a notification on February 7, 2006 that the boiler identified under EU03 as #2D1747 would be having its burner replaced in the near future. The new burner will have a maximum heat input capacity of 10.5 million Btu/hr. The new burner is a low NO_x burner based on maximum heat input capacity with a maximum NO_x emission concentration rate of 30 ppm (v) NO_x. The new burner will have flue gas recirculation capability.

The Division received an application on February 23, 2006 designating the Open Area Coating Operations that take place in the area near building 7156A as an insignificant activity. The application requested that Open Area Coating consumption be limited to less than 5 gallons per day and no more than 60 gallons per consecutive twelve (12) month period. The Division determined that the Open Area Coating activity does not qualify as an Insignificant Activity. Open Area Coating is now listed under EU02 and has annual monitoring and record keeping requirements for coating usage. In addition the application identifies the following building number changes (administrative changes):

- the paint booth, EU06 (55), from “Building 7162-SC1” to Building “71005-SC1” and
- the abrasive blasting facility, EU07 (57), from being located in building 7162 to being located in building 71004.

SOURCE DESCRIPTION (CONTINUED):

The emission sources contained in permit V-06-003 for Headquarters, 101st Airborne Division (Air Assault) and Fort Campbell are located entirely in Christian County, Kentucky. There are additional emission sources in Montgomery County, Tennessee. These emission sources are permitted under the Tennessee Air Pollution Control Board, Department of Environment and Conservation Title V permit number 546196. At this time the Division will issue a separate Title V permit to the emission sources located in Kentucky. The basis for issuance of a separate Title V permit is provided in the U.S. Environmental Protection Agency Title V guidance memorandum, "Major Source Determinations for Military Installations under the Air Toxics, New Source Review, and Title V Operating Permit Programs of the Clean Air Act," dated August 2, 1996. The Division recognizes that any regulatory applicability determinations for Headquarters, 101st Airborne Division (Air Assault) and Fort Campbell in Christian County, Kentucky will be based on the total emissions from all emission sources in Kentucky and Tennessee.

COMMENTS:**Emission Units 3 and 5**

The total source wide heat input capacity including all boilers with a rated capacity fuel input greater than 1 MMBTU/hr is 378.4 MMBTU/hr. The emission limitations for PM and SO₂ for the boilers pursuant to 401 KAR 59:015 § 4 (1)(b) and 401 KAR 59:015 § 5 (1)(b) are 0.10 lbs/MMBTU for PM and 0.80 lbs/MMBTU for SO₂. The units are in compliance with the PM, Opacity and SO₂ standards so long as the units are burning natural gas. When burning distillate oil, it will be required that records of the sulfur content of the fuel oil are maintained. The permittee will be required to submit semi-annual reports of the sulfur content of the distillate oil when burning distillate oil. Emission factors for natural gas combustion are referenced from AP-42, Chapter 1.4, Tables 1.4-1 and 1.4-2. Emission factors for distillate oil combustion are referenced from AP-42, Chapter 1.3, Tables 1.3-1, 1.3-3 and 1.3-10.

Emission Unit 1 is a modification station and paint booth located in building 6490. The items painted in the fully enclosed booth are military equipment including HUMVEE's and trucks. Aerospace vehicles are not painted in this booth. The operation includes the application of waterborne specialty coatings [waterborne Chemical Agent Resistant Coatings (CARC)] using High Volume Low Pressure (HVLV) spray gun type applicators for most exterior coating applications. When necessary, make up air to the spray booth is heated. The booth is equipped with multistage dry filters for control of PM/PM₁₀. The emission factors for individual HAPs, PM/PM₁₀ and VOC are based on worst-case values for the coatings used at this booth. A transfer efficiency of 90 % is used in calculating emission factors for PM/PM₁₀. A control efficiency of 95 % is used in the calculation of PM/PM₁₀ emissions. The paint booth was constructed in 1985.

COMMENTS (CONTINUED):

Emission Unit 2 is repair and refinishing coating operations for military aircraft in a fully enclosed spray area (spray booth). Operations include the application of waterborne specialty coatings (CARC and epoxy-polymide type based primer) to aircraft using spray gun type applicators (HVLP for most exterior coating applications); conducting depainting operations on aircraft, hand-wipe cleaning operations on aircraft and spray gun cleaning operations (separate enclosed system) in the spray booth. Only one type of operation can be conducted at a time. The booth is equipped with multistage dry filters for control of PM/PM₁₀. A transfer efficiency of 85 % is used in calculating emission factors for PM/PM₁₀. A control efficiency of 95 % is used in the calculation of PM/PM₁₀ emissions. Worst-case emission factors are used for calculating HAP, VOC and PM/PM₁₀ emissions. The paint booth was constructed in 1977.

Emission Unit 3 is three natural gas/distillate oil fired boilers located in building 3902. The boilers' primary fuel is natural gas and the secondary fuel is distillate oil. The boilers were constructed in 1976. These boilers are subject to 40 CFR 63 Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, §63.7506(b), limited requirements.

Insignificant Activity 138 is open area repair and refinishing coating operations. Operations are limited to the interiors of aircraft. Waterborne epoxy-polymide primer and corrosion top-coat (specialty coatings) are applied to the interior of the aircraft by an atomized spray gun applicator. Hand-wipes are used for aircraft cleaning operations. Spray gun cleaning operations are conducted using the enclosed cleaning system located in building 7156A-SC1 spray booth. Operations are limited to daylight periods with temperatures $\geq 59^{\circ}\text{F}$. The open area coating operation is located approximately 1.25 miles from the nearest property line. The coating operation is conducted on the airfield ramp in the vicinity of a spray booth used to coat aircraft. Coatings are applied to the interior fuselage with a spray gun. The coatings are air dried. Worst-case emission factors are used for calculating HAP, VOC and PM/PM₁₀ emissions.

Emission Unit 4 is a natural gas/distillate oil fired boiler located in building 3902. The boiler's primary fuel is natural gas and the secondary fuel is distillate oil. The boiler was constructed in 1999. This boiler is subject to standards for opacity and SO₂ emissions specified in 40 CFR 60, Subpart Dc. The SO₂ emission limitation required by 40 CFR 60.42c(d) is 0.50 lb/MMBTU or as an alternative the fuel shall not contain greater than 0.5 weight percent sulfur. This limit is more stringent than the SO₂ limit required by 401 KAR 59:015 § 5(1)(b) and therefore is the limit that must be met for compliance purposes. This boiler is subject to 40 CFR 63 Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, §63.7506(b), limited requirements.

Emission Unit 5 is a repair and refinishing coating operation for helicopter components. The items coated are propeller blades, interior fiberglass panels, and aluminum aircraft exterior panels. The items are coated with waterborne specialty coatings as defined in Appendix A of 40 CFR 63, Subpart GG. The 4 sided spray booth is a 30.33' x 14' x 10' Air Filtration Co., Model AMB3012. It is equipped with a 3 stage exhaust filter system (2 panels, 1 bag) and 2 air atomized spray guns. The booth is enclosed in a 4 sided room with a ceiling, inside a hanger. A transfer efficiency of 85 % is used in calculating emission factors for PM/PM₁₀. A control efficiency of 95 % is used in the calculation of PM/PM₁₀ emissions. Worst-case emission factors are used for calculating HAP, VOC and PM/PM₁₀ emissions. The paint booth was constructed in 2001.

COMMENTS (CONTINUED):

Emission Unit 6 is a repair and refinishing coating operation for the interior and exterior of helicopter flight system components, including helicopter blades. The coatings used are waterborne specialty coatings as defined in Appendix A of Subpart GG (CARC and epoxy-polymide primer). The 4 sided spray booth is a 30' x 25' x 75' Global Finishing Solutions, Model DB-3025. It is equipped with a 3-stage exhaust filter system for PM emissions (1 Roll Media, 1 Panel Filter, and 1 Bag Filter) and 2 air atomized spray guns. The booth is enclosed in a 4 sided room with a ceiling. A transfer efficiency of 85 % is used in calculating emission factors for PM/PM₁₀. A control efficiency of 95 % is used in the calculation of PM/PM₁₀ emissions. Worst-case emission factors are used for calculating HAP, VOC and PM/PM₁₀ emissions. This paint booth has not been constructed yet.

Emission Unit 7 is abrasive blaster for stripping dry paint from the fuselage of aerospace vehicles using plastic media as the blasting material. The process equipment is a Titan Abrasive System, Model DS45. Plastic media is expelled through one nozzle with a blasting capacity of 1,000 lb/hour. The products produced from this operation are clean aerospace vehicle fuselages. The emission factor for PM is referenced from the application. There is a dust collection system for PM/PM₁₀. For the purpose of calculating PM/PM₁₀ emissions a control efficiency of 99.7 % is used. The abrasive blaster has not been constructed yet.

EMISSION AND OPERATING CAPS DESCRIPTION:

EU02, a modification shop and spray booth equipped with exhaust filters is subject to the following operating requirements:

- 40 CFR 63.744 (b) (2) Standards: Hand wipe cleaning
- 40 CFR 63.744 (c) (1) Standards: Spray gun cleaning
- 40 CFR 63.746 (b) (3) Standards: Depainting operations
- 40 CFR 63.748 Standards: Handling and storage of waste
- 40 CFR 63.750 (a) Test methods and procedures – *Composition determination*
- 40 CFR 63.750 (b) Test methods and procedures – *Vapor pressure determination*
- 40 CFR 63.750 (j) (3) Test methods and procedures – *Spot stripping and decal removal*

EU05, an aerospace rework shop and spray booth equipped with exhaust filters is subject to the following operating requirements:

- 40 CFR 63.744 (b) (2) Standards: Hand wipe cleaning
- 40 CFR 63.744 (c) (1) Standards: Spray gun cleaning
- 40 CFR 63.746 (b) (3) Standards: Depainting operations
- 40 CFR 63.748 Standards: Handling and storage of waste
- 40 CFR 63.750 (a) Test methods and procedures – *Composition determination*
- 40 CFR 63.750 (b) Test methods and procedures – *Vapor pressure determination*
- 40 CFR 63.750 (j) (3) Test methods and procedures – *Spot stripping and decal removal*

EU06, an aerospace rework shop and spray booth equipped with exhaust filters is subject to the following operating requirements:

- 40 CFR 63.744 (b) (2) Standards: Hand wipe cleaning
- 40 CFR 63.744 (c) (1) Standards: Spray gun cleaning
- 40 CFR 63.746 (b) (3) Standards: Depainting operations
- 40 CFR 63.748 Standards: Handling and storage of waste
- 40 CFR 63.750 (a) Test methods and procedures – *Composition determination*
- 40 CFR 63.750 (b) Test methods and procedures – *Vapor pressure determination*
- 40 CFR 63.750 (j) (3) Test methods and procedures – *Spot stripping and decal removal*

EMISSION AND OPERATING CAPS DESCRIPTION (CONTINUED):

Headquarters, 101st Airborne Division (Air Assault) and Fort Campbell will be subject to the following source wide emission caps:

<u>Pollutant</u>	<u>tpy</u>
Carbon monoxide (CO)	50
Nitrogen Dioxide (NO ₂) [expressed as nitrogen oxides (NO _x)]	75
Sulfur Dioxide (SO ₂)	35
Volatile Organic Compounds (VOCs)	25

By taking these emission limits, the source will preclude the applicability of 401 KAR 51:017, Prevention of significant deterioration of air quality for CO, NO₂ and SO₂ and VOC.

Potentially hazardous matter or toxic substances

An air dispersion model protocol for potentially hazardous matter and toxic substance emissions (air toxics) for sources listed in Section B and Section C of this permit shall be submitted within 60 days of the issuance of the final permit. Upon approval of the protocol, the source shall model the air toxics emissions as indicated in the protocol. The source shall submit the results of the air modeling to the Division, whereupon the emissions of toxics shall be evaluated to determine the compliance status with 401 KAR 63:020.

The compliance determination is based on the potential to emit emission rates of toxics (e.g., chromium) given in the application submitted by the source. If additional HAPs are identified that were not present in the application, the potential to emit emission rates of those HAPs shall also be included in the air dispersion model.

If the source alters process rates, material formulations, or any other factor that will result in an increase of emissions or the addition of toxic emissions not previously evaluated by the Division, the source shall submit the appropriate application forms pursuant to 401 KAR 52:020, along with modeling to show that the facility will remain in compliance with 401 KAR 63:020.

PERIODIC MONITORING:

Emission Point Number(s)	Description	Monitoring Requirements
EU01 (12)	Bldg. 6490 SC-1, Spray booth with fabric filters.	Monthly monitoring of coating and thinner usage. Daily observation of filter pressure drop. Qualitative visual observation of opacity.
EU02 (13)	Bldg. 7156 SC-1, Modification station and spray booth with fabric filters. Open Area Coating near Building 7156A	Monthly monitoring of coating and thinner usage. Daily observation of filter pressure drop. Qualitative visual observation of opacity. The requirements of § 63.751 (a) of Subpart GG shall be met. Monitor the annual usage of coatings.

PERIODIC MONITORING (CONTINUED):

Emission Point Number(s)	Description	Monitoring Requirements
EU03 (23)	Bldg. 3902, 10.5, 50 and 50 MMBTU/hr Natural Gas Boiler with back up fuel oil. Constructed 1976.	Monitor the usage of natural gas and distillate oil monthly. Monitor the sulfur content of distillate oil combusted quarterly.
EU04 (53)	Bldg. 3902, 42 MMBTU/hr Natural Gas Boiler with back fuel oil. Constructed 1999.	Monitor the usage of natural gas and distillate oil monthly. Monitor the heating value and sulfur content of distillate oil combusted quarterly (fuel supplier certification).
EU05 (54)	Bldg. 7274-SC1, 4-sided spray booth with 3 stage filter system.	Monthly monitoring of coating and thinner usage. Daily observation of filter pressure drop. Qualitative visual observation of opacity. The requirements of § 63.751 (a) of Subpart GG shall be met.
EU06 (55)	Bldg. 71005-SC1, 4-sided spray booth with 3 stage filter system and carbon system for VOC.	Monthly monitoring of coating and thinner usage. Daily observation of filter pressure drop. Qualitative visual observation of opacity. The requirements of § 63.751 (a) of Subpart GG shall be met.
EU07 (57)	Bldg. 71004, Abrasive blasting for stripping dry paint from aircraft. Equipped with dust collection filter system.	Daily monitoring of filter pressure drop. Method 9 once a year.
Insignificant Activities	Boilers, Makeup air heaters (MUAH) and emergency generators	Boilers & MUAH : Monitor the source wide usage of natural gas and distillate oil burned monthly. Emergency Generators: Monitor monthly usage of diesel fuel or assume that each emergency generator used an amount of diesel fuel corresponding to 500 hours of operation per rolling 12 month total.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.